

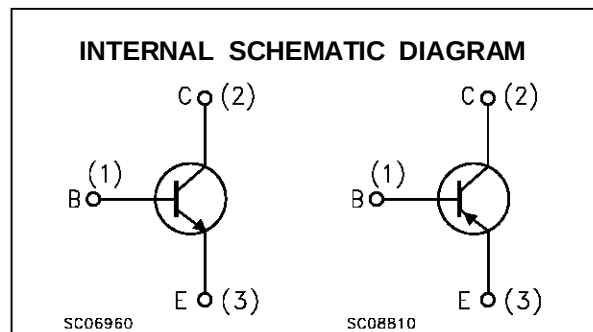
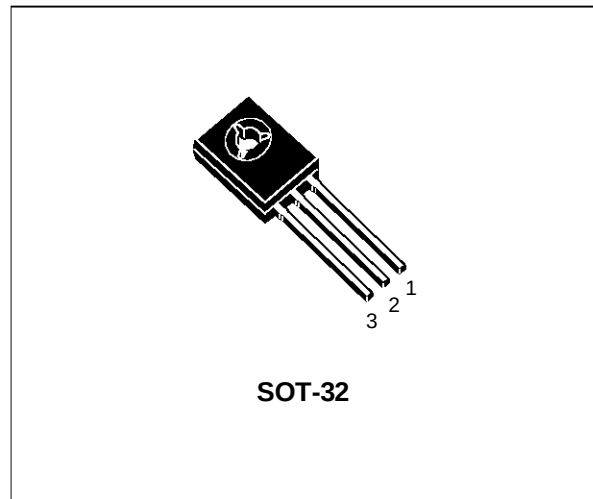
COMPLEMENTARY SILICON POWER TRANSISTORS

■ SGS-THOMSON PREFERRED SALESTYPES

DESCRIPTION

The BD235 and BD237 are silicon epitaxial-base NPN power transistor in Jedec SOT-32 plastic package intended for use in medium power linear and switching applications.

The complementary PNP types are BD236 and BD238 respectively.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit	
		NPN	BD235		BD237
		PNP	BD236		BD238
V _{CBO}	Collector-Base Voltage (I _E = 0)	60	100	V	
V _{CER}	Collector-Base Voltage (R _{BE} = 1KΩ)	60	100	V	
V _{CEO}	Collector-Emitter Voltage (I _B = 0)	60	80	V	
V _{EBO}	Emitter-Base Voltage (I _C = 0)	5		V	
I _C	Collector Current	2		A	
I _{CM}	Collector Peak Current	6		A	
P _{tot}	Total Dissipation at T _c = 25 °C	25		W	
T _{stg}	Storage Temperature	-65 to 150		°C	
T _j	Max. Operating Junction Temperature	150		°C	

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj-case}$	Thermal Resistance Junction-case	Max	5	$^{\circ}\text{C}/\text{W}$
----------------	----------------------------------	-----	---	-----------------------------

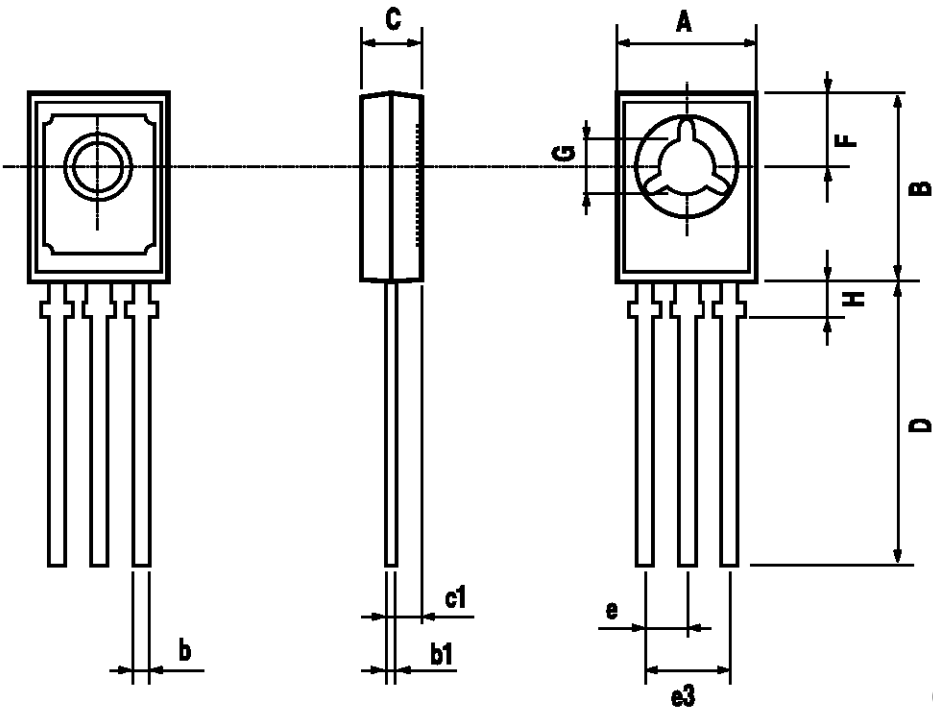
ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current ($I_E = 0$)	$V_{CE} = \text{rated } V_{CEO}$ $V_{CE} = \text{rated } V_{CEO} \quad T_C = 150^{\circ}\text{C}$			0.1 2	mA mA
I_{EBO}	Emitter Cut-off Current ($I_C = 0$)	$V_{EB} = 5 \text{ V}$			1	mA
$V_{CEO(sus)}^*$	Collector-Emitter Sustaining Voltage	$I_C = 100 \text{ mA}$ for BD235/BD236 for BD237/BD238	60 80			V V
$V_{CE(sat)}^*$	Collector-Emitter Saturation Voltage	$I_C = 1 \text{ A} \quad I_B = 0.1 \text{ A}$			0.6	V
V_{BE}^*	Base-Emitter Voltage	$I_C = 1 \text{ A} \quad V_{CE} = 2 \text{ V}$			1.3	V
h_{FE}^*	DC Current Gain	$I_C = 150 \text{ mA} \quad V_{CE} = 2 \text{ V}$ $I_C = 1 \text{ A} \quad V_{CE} = 2 \text{ V}$	40 25			
f_T	Transition frequency	$I_C = 250 \text{ mA} \quad V_{CE} = 10 \text{ V}$	3			MHz
h_{FE1}/h_{FE2}^*	Matched Pairs	$I_C = 150 \text{ mA} \quad V_{CE} = 2 \text{ V}$		1.6		

* Pulsed: Pulse duration = 300 μs , duty cycle 1.5 %

SOT-32 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	7.4		7.8	0.291		0.307
B	10.5		10.8	0.413		0.445
b	0.7		0.9	0.028		0.035
b1	0.49		0.75	0.019		0.030
C	2.4		2.7	0.04		0.106
c1		1.2			0.047	
D		15.7			0.618	
e		2.2			0.087	
e3		4.4			0.173	
F		3.8			0.150	
G	3		3.2	0.118		0.126
H			2.54			0.100



0016114

Information furnished is believed to be accurate and reliable. However, SGS-THOMSON Microelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SGS-THOMSON Microelectronics. Specifications mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. SGS-THOMSON Microelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of SGS-THOMSON Microelectronics.

© 1995 SGS-THOMSON Microelectronics - All Rights Reserved

SGS-THOMSON Microelectronics GROUP OF COMPANIES

Australia - Brazil - France - Germany - Hong Kong - Italy - Japan - Korea - Malaysia - Malta - Morocco - The Netherlands -
Singapore - Spain - Sweden - Switzerland - Taiwan - Thailand - United Kingdom - U.S.A